Historia naturalis bulgarica, 11, 2000: 65-72

Studies on Erythraeoidea (Acari: Prostigmata) from Africa. I. The genera *Cecidopus* and *Caeculisoma* from Nigeria (Erythraeidae: Callidosomatinae)

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Introduction

During my stay in Nigeria (1976 - 1979), I had the opportunity to collect some mites (among many other animals), including a number of species of the superfamily Erythraeoidea. Both families of this superfamily (Erythraeidae and Smarididae) are inadequately known in Africa and poorly studied in Nigeria.

The bulk of the material was collected in Plateau State from the following sites:

1. Jos - mainly under stones and in leaf litter in town and in Jos Wildlife Park (alt. 1300 - 1350 m, hilly savanna with rocky outcrops). Cool and humid area (rainfall over 2000 mm per year), the dry season lasting from October to March and rainy season from April to September.

2. Wase Rock Game Reserve - small protected area (0,96 km^2) around a high volcanic plug rising sheer above the surrounding plain close to Wase town. Grass and stones at the rock base.

3. Pandam Wildlife Park - thick savanna forest (partly flooded) around Lake Pandam, alt. ca. 130 m, area 363 km^2 (Sikes, 1974).

4. Pai River Game Reserve - the most extensive (2124 km^2) of all the protected areas in Plateau State, lowland Sudan savanna by the river Pai, high grass being burned during the dry season.

Descriptions

Tribe Callidosomatini

Only one of the 3 genera forming the tribe Callidosomatini is known from Africa - *Caeculisoma* Berlese. This genus has been reported from Argentina, New

Fig. 1-3. *Caeculisoma haussa* sp. n.: 1 - Crista, 2 - Palp, 3 - Leg I

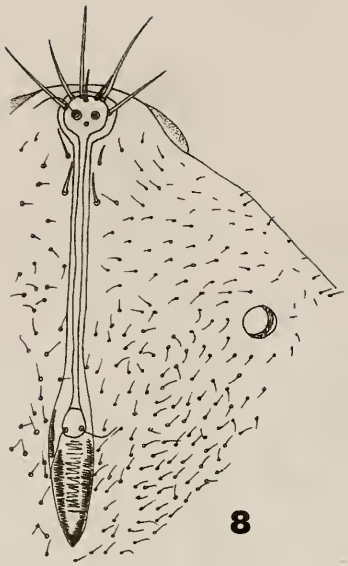
Guinea, Australia, Indonesia, Marquesas Islands, Bhutan (unpublished) and DR Congo. With the exception of the Bhutan find, all other species of this genus have been described from the Southern Hemisphere. Only one species has been published from Africa (*Caeculisoma afrum* Cooreman, 1958 from Kivu, formerly Zaire, now DR Congo).

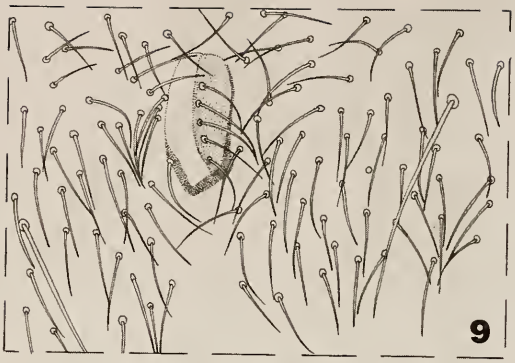
I have found in northern Nigeria a representative of a new species of the genus *Caeculisoma* - the first to be described from the Northern Hemisphere.

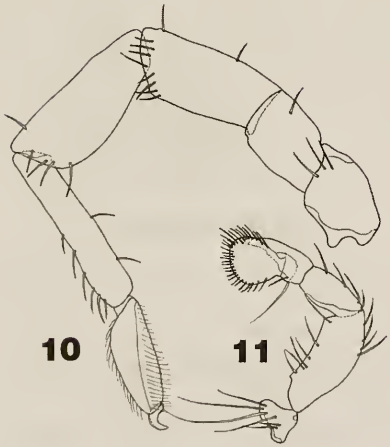
Caeculisoma haussa sp. n.

Material. 1 ♀ ad. (holotype), Maiduguri, Northern Nigeria, 25.9.1976. The specimen is preserved in the collection of the National Museum of Natural History, Bulgarian Academy of Sciences, Sofia.

Fig 4-7. *Caeculisoma haussa* sp. n.: 4 - Leg II, 5 - Leg III, 6 - Leg IV, 7 - Anogenital area







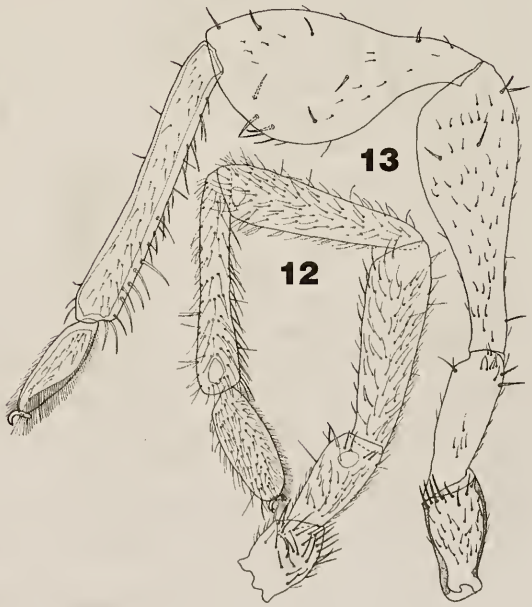


Fig. 8 -13. *Cecidopus nigeriae* sp.n.: 8 - Crista, 9 - Genital area 10 - Leg I, 11 - Palp, 12 - Leg II, 13 - Leg IV

Description. Palp. Femur 180 μm long, genu 100 μm, tibia 50 μm, tarsus 75 μm. The shape of the palp similar to that of *C. afrum* Cooreman, but more robust. Proximal seta of femur very long (more than half of the length of femur).

Dorsum. Idiosoma long 1790 μm. Idiosomal setae (Fig. 1) vary considerably in length (30-75 μm), but are not of two clearly distinct types.

Crista 700 μm long, distance between the bases of anterior and posterior sensilla (ISD) 405 μm, distance between the base of posterior sensilla and the posterior end of crista 230 μm. Anterior and posterior sensillae broken. On the anterior sensillary area 6 setae (other than the sensillae), 70-110 μm long. The first 6 sensillae flanking the crista (behind the anterior sensillary area), 3 on each side, are very similar in shape and length to the setae on the anterior area (95 - 100 μm long).

Inner diameter of the eye is 50 μm, distance between its center and the crista is 180 μm, distance from its center to the base of the right anterior sensilla is 320 μm, from its center to the base of the right posterior sensilla - 250 μm. The point where the axis connecting both eyes crosses the crista is 265 μm from the anterior sensillae and 145 μm from the posterior sensillae.

Venter. Simple, uniform setae with average length 20-30 μm.

Legs. Length of leg segments (in μm):

Leg I - bf = 200; tf = 305; g = 275; ti = 305; ta = 240

Leg II - bf = 115; tf = 130; g = 215; ti = 195; ta = 130

Leg III - bf = 125; tf = 150; g = 240; ti = 225; ta = 130

Leg IV - bf = 150; tf = 255; g = 320; ti = 280; ta = 135

With the mite genus *Caeculisoma* the leg setae are very peculiar and complex. With the new species *C. haussa*, as well as with the only other species adequately described (*C. afrum* Cooreman), on each segment are found setae of several types, especially on the femur, genu and tibia. I have marked them on the figures with the same letters as on the drawings of COOREMAN (1958), in order to facilitate the comparison. Setae of type *b* are scarce on *C. haussa*. On trochanter I only setae of type *a* are present. As with *C. afrum*, short spines are situated distally of the tubercles on genu and tibia. These are described by COOREMAN (1958) as: "élement sensoriel en forme de cône court".

Discussion. Virtually none of the *Caeculisoma* species has been described and illustrated according to modern standards. These inadequately described species however live in localities far removed from Africa and the chance of coincidence with our African species is small. Fortunately, the only species known from Africa has been described in detail by COOREMAN (1958). This provides me with the opportunity to compare his *Caeculisoma afrum* from Congo with the new *Caeculisoma haussa* from Nigeria (their localities are approximately 2400 km far away from each other). The Nigerian species lives in dry lowland savanna and the species of Cooreman - in the humus of mountain rain forest at alt. 2200 m in the Kivu Province, DR Congo (Zaire).

The two species are clearly related. The main distinctive features are as follows:

1. The anterior sensillary area of *Caeculisoma afrum* bears 20 setae, while that of *Caeculisoma haussa* bears only 7 setae.

2. Despite the similarity of the types of leg setae of *C. afrum* and *C. haussa*, their number and arrangement on the legs are different. *Caeculisoma afrum* has a much higher number of all types of setae. Setae type *b* (in the present publication and in that of COOREMAN, 1958) are more slender by *Caeculisoma afrum* than by *C. haussa*. They are present on *bf* I of *Caeculisoma afrum* and are missing in *Caeculisoma haussa*. Similar differences may be found on all leg segments.

3. The length ratio of leg segments, and the other dimensions, are similar in the two species, but with *Caeculisoma afrum* the length of leg segments is nearly double those of *Caeculisoma haussa*.

Tribe Charletoniini

Genus *Cecidopus* Karsch

The genus *Cecidopus* was created by KARSCH (1879) for a mite form Ceylon (Sri Lanka). This mite (*Cecidopus diversipes*) has not since been rediscovered or redescribed. The two other species in Asia are *C. shyamae* Khot, 1965 from India and *C. qadrii* Ahsan et Anwarullah, 1970 from Pakistan.

The remaining three (may be two) species of this genus are known from Africa: *C. chubbi* (Berlese, 1914) and *C. mitchelli* (Hirst, 1924) from South Africa (synonyms ?, see SOUTHCOTT, 1961) and *C. straeleni* Cooreman, 1953 from Congo. Among the mites collected in Nigeria two specimens were representatives of a new *Cecidopus*.

Cecidopus nigeriae sp. n.

Material. 1 ♂ (holotype), 1 ♂ (paratype), both specimens full with eggs, Nigeria, Plateau State, Wase Rock Game Reserve, under stone, 01.06.1978. Holotype deposited in the mite collection of the National Museum of Natural History, Sofia, paratype in the collection of the Royal Museum of Central Africa in Tervuren, Belgium (No 170555).

Description. Palp. Tarsus pyriform, 120 x 90 μm, extending beyond palpal tibial claw. The palpal tarsus of the paratype has been drawn, one of the tarsi of the holotype being lost and the other mounted in a position unsuitable for measuring and figuring.

Idiosoma. Dorsum: idiosomal setae short (18-30 μm), both sides of the crista there are two longer (60-70 μm) and more massive setae. Crista long (890 μm), distance SL = 760 μm. On the anterior sensillary area 7 setae (holotype) and 4 (paratype), 80-175 μm long, and two sensillae 90 μm long. Distance between the eye center and the middle of crista 355 μm.

Venter. Idiosomal setae similar to the dorsal setae, but much more slender, 35-50 μm long.

Legs. I, II, and III with no special features, covered with short, smooth, uniform setae. The most remarkable feature of the whole genus *Cecidopus* is the shape of the telofemur IV and especially of genu IV - they are greatly enlarged, "clublike". SOUTHCOTT (1961) has corrected the errors of the formers authors about the right position of this "club" on the leg IV. Neither Southcott himself, nor any other recent author seem to have seen many specimens belonging to the genus *Cecidopus* and probably the present notes contain the first contribution to the knowledge of *Cecidopus* since 1970.

Length of leg segments of *C. nigeriae* sp. n. - holotype, in μm (the values of these dimension with *C. straeleni* are given in brackets, after COOREMAN, 1953):

I - *bf* = 335 (215); *tf* = 575 (530); *g* = 590 (540); *ti* = 640 (560); *ta* = 370 (400)
II - *bf* = 225 (130); *tf* = 325 (290); *g* = 385 (340); *ti* = 415(350); *ta* = 255 (215)
III - *bf* = 255 (140); *tf* = 415 (430); *g* = 495 (470); *ti* = 530 (470); *ta* = 255 (250)
IV - *bf* = 460 (325); *tf* = 815 (780); *g* = 770 (740); *ti* = 865; *ta* = 320

Discussion. Generally speaking, the new species is bigger than *C. straeleni.* Some of the dimensions of leg segments are close with both species, others differ considerably. The anterior sensory area of *C. mitchelli* (Hirst) from South Africa bears 12 setae (4-7 with the new species).

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Received on 21.7.2000

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Изследвания върху Erythraeoidea (Acari: Erythraeidae) от Африка. I. Родовете *Caeculisoma* и *Cecidopus* от Нигерия (Erythraeidae: Callidosomatinae)

Петър БЕРОН

(Р е з ю м е)

Описват се новите видове *Caeculisoma haussa* sp.n. и *Cecidopus nigeriae* sp.n. от Нигерия. Родовете *Caeculisoma* и *Cecidopus* се съобщават за пръв път от Нигерия, а *Caeculisoma* - за пръв път от Северното полукълбо.